



BRIGHAM YOUNG
UNIVERSITY

CS Department Colloquium Series



Ricardo Vilalta

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1170 TMCB, 11:00 A.M.

Automatic Geomorphic Mapping of Mars Using Pattern Recognition

Abstract

The principal goal of this project is to develop a robust system for the automatic geomorphic mapping of Mars using a fusion of pattern recognition tools, including machine learning, computer vision, and data compression. In this talk I will focus on how machine learning can play a major role in the understanding of the geological processes on Mars. Specifically, I will show how semi-supervised learning can be used to minimize expert intervention and maximize efficiency during map generation; and how we plan to transfer knowledge across different regions of Mars by exploiting experience gained while learning predictive models on different regions of the planet –a process known as meta-learning.

Biography

Dr. Ricardo Vilalta is an assistant professor in the department of computer science at the University of Houston. He holds MS and Ph.D. degrees in computer science from the University of Illinois at Urbana-Champaign. His research interests are in machine learning, statistical learning theory, data mining, and artificial intelligence. He is recipient of the best paper award at the European Conference on Machine Learning (2003) and recipient of the NSF Career Award (2005). For the past three years he has worked as a collaborator to the Lunar and Planetary Institute providing data mining tools for the analysis of Mars surface.

Donuts will be provided